

run, put up its stock from \$1.50 to \$25 per share, and infused new life throughout the district, important developments in a large number of other mines there being immediately thereafter reported, and their stocks consequently largely advancing at the San Francisco Mining Board.

The stock of the Sierra Nevada Mine, of the Comstock Lode, has advanced from about \$5 to nearly \$35 within a few weeks because of the reported discovery of a bonanza on the 2,100 foot level. The mine embraces 3,300 feet of the lode, and is of a group of thirteen mines controlled by Flood, Fair & McKay, which together absorb 13,478 feet of the Comstock Lode. It was stocked some years since at \$10,000,000, and has paid \$102,500 in dividends, while it has called in \$2,100,000 in fifty-five assessments. Four or five months since its stock sold as low as \$2.60.

The Virginia City *Enterprise* says: "The strike in the Sierra Nevada has been made at a depth that corresponds to the 2,200 foot levels of several of the leading mines at this end of the lode, and therefore shows that depth is no hindrance to the formation of bonanzas. This being the case, all are turning with new interest to the many mines in which they are now about ready to cross-cut at depths ranging from 1,800 to 2,400 feet. Never before have so many mines along the entire length of the Comstock been ready, at about the same time, to do deep and promising prospecting. The result of what many mining companies have been working years to attain is now soon to be seen. The Belcher and Crown Point companies have at last arrived at a point which it has cost the labor of several years and the expenditure of vast sums of money to reach; and to the northward are the Yellow Jacket and Imperial, with the Alpha and a whole group of mines that are now about ripe for the work of thorough exploration.

"The Savage and Hale and Norcross are being prospected at the depth of 2,100 feet, the Julia at 2,000, and the Gould and Curry and Best and Belcher at the depth of 1,950 feet. The Ophir Company—whatever they may have on the 2,000 level—will soon reach their ore body at a depth of 2,100 feet.

"Through this mine and the Sierra Nevada the Mexican and Union Consolidated mines may readily be tapped at the depth of 2,100 feet. At the south end of the lode the Overman, Caledonia, Lady Washington, New York, Alta, and Justice are all in a position to do good work at prospecting."

The Sutro Tunnel effected communication with the Comstock Lode at the 1,650 foot level of the Savage Mine, and shortly all the mines at this end will be in communication with it. Even if no bonanzas are struck in them their low grade and rejected ores can then be worked at a profit.

THE AMERICAN ASSOCIATION AT ST. LOUIS.

The Annual Convention of the American Association for the Advancement of Science, held in St. Louis, Mo., August 21-27, attracted less popular attention than usual, yet was on the whole a very successful and satisfactory meeting. The terrible pestilence raging in the lower Mississippi valley made such demands upon public interest and sympathy that the claims of pure science were for the time overshadowed. The health of the city, however, was fortunately good, and the welcome accorded to the assembled scientists by the citizens of St. Louis was all that could have been desired.

A notable feature of the meeting was the prevalent spirit manifested in favor of the dissemination of scientific knowledge in popular form, by lectures, by means of the press, and by direct scientific teaching in the public schools. The cordial recognition of the importance and value of the labors of practical investigators, as represented by Mr. Edison, was another striking feature. As Professor Barker observed on introducing Mr. Edison, "the time has come when scientists can no longer claim to be the only discoverers; the practical man has found science too slow, and has stepped in and discovered for himself." Seeing how cordially the scientists had received the practical man into their ranks during the eclipse observations, it is impossible to attribute their tardy recognition of his merits (as might otherwise have happened) to the dispatch received that morning announcing that the Paris Exposition had awarded Mr. Edison the grand prize for the most wonderful inventions of the age.

From the press dispatches we compile the following summary of the more important work done day by day.

August 21.—The Association met at the Washington University. Prof. Newcomb, the retiring President, called the meeting to order, and introduced Prof. O. C. Marsh, the president for the ensuing year, who made a brief address. Wm. T. Harris, of the local committee, then introduced Mayor Overstolz, who delivered an address of welcome in behalf of the citizens of St. Louis. An appropriate response was made by Professor Marsh. Six new members were elected, and the names of thirty candidates for membership were presented. The Association then adjourned till night, to give the members of the different sections an opportunity to organize, which was done in the afternoon. In the evening addresses were delivered by Vice Presidents Thurston and Grote. The subject of the former was "Philosophical Methods of Advancement of Science" and of the latter, "Education a Succession of Experiences."

August 22.—The report of the committee to memorialize the State Legislatures regarding the cultivation of timber and preservation of forests was read and adopted. After some other miscellaneous business the meeting adjourned and met in sections. Papers on chemistry and physics were

read in Section A, by Messrs. Osborne, Thurston, and Clarke; papers on anthropology were read in Section B, by Messrs. Morgan, Henderson, and Banelier, and papers on Entomology by Professor Riley. The event of the evening was the address of the retiring president, Professor Newcomb, on the two modes of explaining nature and the progress of men from teleological to scientific thinking.

August 23.—The committee appointed to memorialize Congress in relation to meteorological researches reported through Professor Bolton, who proposed that the committee be continued; that Mr. Osborne, of Washington, be added to the committee, and that Professor Loomis be requested to take the chair. A number of new members were introduced, among them Mr. Edison, who afterward read, in Section A, a paper on "The Use of the Tasimeter for Measuring the Heat of Stars and of the Sun's Corona," after which Professor Barker read for him three other papers, that on his new voltameter being perhaps the most important. Professor Barker then read a paper on "The Results of the Spectroscopic Observation of the Solar Eclipse of July 29, 1878."

August 26.—In Section A, Professor Cesbaine gave a scheme for making meteorological observations in a tall tower, by which different strata of air could be reached. Professor Barker, in Mr. Edison's absence, discussed Edison's application of the carbon button. The section had time in the afternoon only to hear a paper on the outline of work done by the Fort Worth solar eclipse party by Professor J. K. Rees. In Section B a paper on the embryology of clepsine was read by Professor C. O. Whitman, of Boston. This paper was illustrated by a beautiful set of wax models after original preparations by Professor Whitman. A paper was read by Professor Wetherby on the geographical distribution of the land and fresh water mollusks of the United States. In geology the section listened to a paper by Professor Todd on the theory of the loess deposit in China as put forth by Richthofen. A paper by C. E. Dutton, of Washington, on the geological history of the Colorado plateau, was more graphic and intelligible than such discourses usually are. The anthropologists listened to a paper by Mr. Perkins on the archaeology of Vermont, and to the announcement of discoveries of glazed pottery and skulls found in use as cinerary urns in Florida mounds by Henry Gillman. Professor Morse sent a paper from Japan on his discovery in Japanese mounds of pottery suggesting the presence of a pre-Aino population who unlike all historic peoples of the Japan archipelago were cannibals. In chemistry the announcement by Professor J. Lawrence Smith of his discovery of the oxide of a new metal which he calls *mosandrium*, the first elementary substance ever discovered by an American, was of very great scientific interest.

August 27.—The Nominating Committee of the Association decided on Saratoga as the place for the next meeting, and the last Wednesday in August, 1879, as the time. The following officers for the ensuing year were elected: Professor George F. Barker, of Philadelphia, President; Professor S. P. Langley, of Allegheny, and J. W. Powell, of Washington, Vice-Presidents; Dr. Little, of Atlanta, Ga., General Secretary; John K. Rees, of St. Louis, Secretary of Section A; and A. G. Wetherby, of Cincinnati, Secretary of Section B. At the general session a resolution was passed requesting Congress to pass a law to secure a uniform system of registration of births, deaths, and marriages in the United States. Papers were read by Professor Marsh on the dinosaurs of the Jurassic, and one by Professor Lake on the discovery of their remains in Colorado. Geological papers were read by Professors Safford, Dutton, and Worthen; on anthropology by Professors Putnam, Belt, Marsh, and Mason; on botany by Professors Engelman and Arthur. The Association elected Mr. Thomas A. Edison a Fellow. Papers were read in Section A by Professors Elliott, Nepper, and Powell.

FACADE OF THE DANISH SECTION AT THE PARIS EXHIBITION.

The facade of the Danish section, in the Street of the Nations, is copied from the Bourse at Copenhagen. It is a small building of brick and sculptured white stone, lacking neither elegance nor originality of design. On each side of the entrance rise two stucco columns, imitating marble. Between each pair is a niche, at present empty. The columns nearest the entrance support projecting pilasters, above which are two other columns of lesser proportions, which form a frame for the curious mullioned window of the first floor. The gable is ornamented with two beautiful Caryatides, between which the royal scutcheon is sculptured. A truncated pyramid surrounded by a sphere crowns the pediment. Within, Denmark occupies but one half of the transverse triforium; the right is occupied by Greece, and the piquant contrast between the products of the country and period of Pericles and those of the cold and foggy Baltic Islands is continued through the galleries appertaining to the facade. Throughout, and even in the vestibule of the Danish house, we meet with the Exhibition of the Direction of the Communal Schools of Copenhagen. Education is greatly considered in this kingdom, especially primary instruction, which is gratuitous and compulsory. Upon the little tables used in the schools are shown the productions of the pupils, drawing albums and copy books. A glass case contains various objects of needle work, cleverly done by little girls. There is, however, nothing relating to the method of secondary instruction, nor to the system adopted in the *lycées* and technical institutions, which are said to be admirably adapted to suit their special needs.

The show cases of the first room contain specimens of printing and Danish book making, ships, rigging, and perfumery. More worthy of note are the beautiful ceramic collections of Madame Ipsen and Peter E. Schon, of Copenhagen. The labels inform us that several of the specimens have been bought by the Vienna Museum. A little further on, a large show case verging upon the longitudinal gallery also attracts notice. Want of space permits us merely to mention the magnificent show of jewelry exhibited by M. Christesen, of Copenhagen; supremely fine are an *épergne* and two grand chalices. The adjoining room is principally devoted to furniture, for the making of which Copenhagen enjoys a certain reputation, which is certainly justified by the present exhibition. The fine buffet sideboards are the prizes of a lottery formed on behalf of the Institution for Idiots. The center of the hall is in the form of a semicircular rotunda, at the upper part of which is a kind of fresco representing the different types of the country in national costume. Shop keepers, sailors, fishermen, workmen, and peasants follow each other hand in hand, and carrying garlands. Perhaps it is the neighborhood of Greece which has inspired this reminiscence of the Panathenaic procession. On entering the third hall, which is devoted to clothing, the skin of the formidable white bear contrasts in its vividness with the soft shading of the eider down. We take our engraving on the first page from *Illustration*.

AMERICAN PLOWS IN FRANCE.

The official report of the dynamometric trials of French and American gang plows at Petit-Bourg, Department of the Seine and Oise, France, August 6 (intended to accompany the illustrated article on the plows of the Paris Exhibition, by our Paris correspondent, U. S. Commissioner E. H. Knight), arrived too late for insertion in this number of the *SCIENTIFIC AMERICAN*. It will be given next week.

Meantime we take great pleasure in stating that the well earned fame of American agricultural machinery was well sustained in the contest.

The competing exhibitors were Meixmoron de Dombasle, of Nancy, France, and Deere & Co., of Moline, Illinois. Though somewhat heavier than the French plow, the American plow was of lighter draught, more speedy, and considerably more efficient than its rival. The prescribed furrow was 175 yards long. It took the French plow eight minutes and fifty seconds to go and come, and the American eight minutes and thirty-four seconds. The power required to displace a metric cube of earth was 7 per cent less for the American than for the French plow. The furrow turned by the American plow was deeper by 6 per cent and broader by over 7½ per cent than that of the French plow.

The detailed report will be found of interest to many besides the owners of the champion plow.

American Institute Exhibition.

This exhibition opens on the 11th day of September, by which date all exhibitors should be in position. The incompleteness of all exhibitions is the cause of general and well deserved complaint, yet we hope our frequent notices of this exhibition may have at least the effect of having this one in good shape on opening day. Any parties intending to exhibit should apply at once, and address all communications to General Superintendent, American Institute, New York city.

Prize for an Invention.

Charles Bartlett, United States Consul at Guadaloupe, informs the Department of State that the authorities of that colony have offered a premium of 100,000 francs to the inventor of a process to obtain a yield of over fourteen per centum from sugar-cane. The competition is open until June 30, 1880. It is not for an improvement on sugar mills, but for the discovery of a process bearing upon the yield of turbinated sugar. All the expenses of transit, putting up of machinery or implements are to be borne by the inventor.

Such an invention would add many millions to the wealth of Guadaloupe, to say nothing of Cuba, our own and other sugar producing countries.

Fish Culture in Wisconsin.

Operations will begin at the Milwaukee hatching house in October. It is intended to hatch the coming season 12,000,000 whitefish and 6,000,000 lake trout. Nearly all these fry will be placed in Lake Michigan off the Wisconsin ports. Smaller quantities will go to the inland lakes which are large and deep enough for the purpose. At the hatchery in this city the production of wall-eyed pike will also be begun the coming season. At Madison preparations are made to supply all the brook trout for which requisitions may be made. They have 20,000 breeders in the Madison hatchery, and spawn will also be taken from wild trout in the streams in the northwestern part of the State. Much dissatisfaction has heretofore existed because the brook trout were not furnished in amounts as required to replenish the exhausted streams of the State. The fish commissioners hope to have enough fry next spring to answer all requisitions for these fish.

Mr. Welshe has been appointed to have charge of the aquarium at the Chicago exposition next month, and will produce specimens of fish from Wisconsin waters for that purpose. The fish commissioners have supplied over one hundred lakes and streams during the last two years with several varieties of fish.—*Milwaukee News*.